Roll No. | | | | | | | | | | | | |

Total No. of Pages : 02

Total No. of Questions : 18

MCA (2015 to 2018) (Sem.–4)

INTERACTIVE COMPUTER GRAPHICS

Subject Code : MCA-403

M.Code : 74121

Time : 3 Hrs. Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. **SECTIONS-A, B, C & D contains TWO questions each carrying TEN marks each and students has to attempt any ONE question from each SECTION.**
2. **SECTION-E is COMPULSORY consisting of TEN questions carrying TWENTY marks in all.**

SECTION-A

1. Elaborate in detail the different graphics devices.

2. a) What are the various color display techniques used in computer graphics? Briefly discuss each.

   b) Differentiate between raster scan and random scan systems.

SECTION-B

3. Differentiate the steps required to scan-convert a circle using the mid-point and Bresenham's algorithm.

4. What do you mean by line clipping? Discuss Cohen-Sutherland line-clipping algorithm for 2-D objects.

SECTION-C

5. What are 3-dimensional geometric transformations? Explain the basic 3-D transformations along with their matrix representation.

6. Explain in detail the properties of Bezier and B-spline curves.

SECTION-D

7. Discuss in detail the Z-buffer algorithm. How does this algorithm determine which surfaces are hidden?

8. Discuss the working of Phong shading algorithm with an example.

SECTION-E

9. Define computer graphics. Write any two applications.

10. What are display controllers?

11. What are the side effects of Bresenham's line drawing technique?

12. What do you mean by Composite transformation?

13. Why are homogeneous coordinate systems required in computer graphics?

14. What is the difference between polygon clipping and text clipping?

15. Write the matrix representation of Shearing.

16. Define Antialiasing.

17. Differentiate between illumination and shading.

18. What is the major difference between A-buffer and Z-buffer methods for visible surface detection?

NOTE : Disclosure of Identity by writing Mobile No. or Marking of passing request on any paper of Answer Sheet will lead to UMC against the Student.